

ANALOG-DIGITAL CONVERTER

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Abstract

PURPOSE:To improve the resolution and the conversion speed of an A/D converter, by utilizing the change of the wavelength of light to perform quantization on the basis of positions of photodetectors.
CONSTITUTION:A laser-activated matter 1 oscillates pulses of laser light synchronously with clock pulses 7, and the frequency of oscillated pulses is determined by the optical length between mirrors 3 and 4. The voltage applied to an electrooptic crystal 2 is changed to change the optical length. Since the oscillation frequency changes continuously except mode jump points for the optical length, this system functions to sample a signal 6, which should be subjected to A/D conversion, synchronously with clock pulses 7. Laser light 5 changes the angle of diffraction in accordance with its wavelength and is made incident to a photodetector corresponding to the angle of diffraction on a photodetector array 11. The output of the photodetector is inputted to an encoder 12, and an A/D-converted encoded output is taken out from a terminal 13.

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